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IS 11554 (1986): Methods of test for air-land cargo pallet nets [TED 14: Aircraft and Space Vehicles]

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IS : 11554 - 1986

(Reaffirmed 2005)

Indian Standard

METHODS OF TEST FOR AIR-LAND CARGO PALLET NETS

1. **Scope** — Specifies testing requirements and methods of test for 2 440 mm high pallet nets to be in freighter versions of high-capacity fixed wing aircraft and is intended to be used in conjunction used with 2 440 mm wide air only and air-land pallets described in IS : 11499-1985 'Specification for air and air-land cargo pallets.

2. Testing Requirements

2.1 *General*

2.1.1 The tests are static in nature to minimize the complexity and cost of the required testing facilities. As far as practical, applied static loads take into account the combined static and dynamic loads anticipated in service.

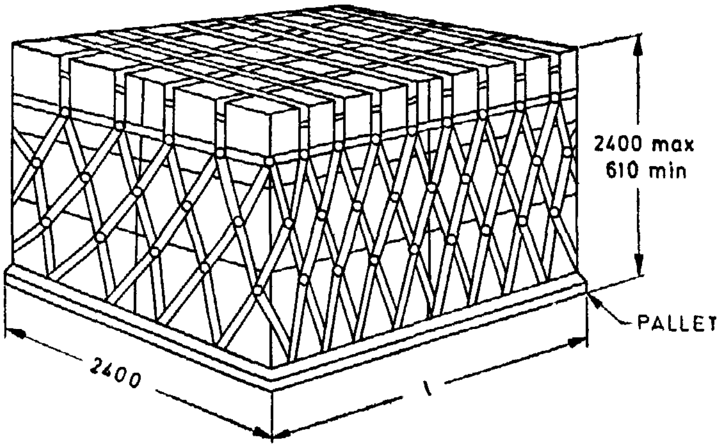
2.1.2 It is intended that tests shall be non-destructive in nature and shall not result in damage to the pallet unless ultimate load conditions are employed.

2.1.3 The test equipment and methods of testing described are meant to demonstrate that the net meets the requirements of this Indian Standard. Other equivalent methods may be employed to obtain the desired result.

2.1.4 In selected cases, tests may be repeated under ultimate load conditions when required for substantiation of analytical data. If this becomes necessary, the net so tested may not be used in service until all its component parts have been inspected and those that exhibit permanent deformation have been replaced.

2.2 *Test Criteria*

2.2.1 A net assembly shall be considered to be satisfactory if, upon inspection before and after testing, its dimensions fall within those specified in Fig. 1 and in the applicable manufacturing drawings.



l = 2·9 m for 3 m PALLET
6·0 m for 6 m PALLET
9·1 m for 9 m PALLET
12·2 m for 12 m PALLET

All dimensions in millimetres.

FIG. 1 NET ASSEMBLY (TYPICAL—PATTERN OPTIONAL)

Air Cargo Handling Sectional Committee, MCPD 8; Air Transport Containers and Pallets Subcommittee, MCPD 8 : 1 [Ref : Doc : MCPD 8 (694)]

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2.2.2 Permanent deformation, if evident, is acceptable at completion of testing to show that the ultimate loads can be restrained, but there shall be no failure to the extent that allows discharge of cargo or allows the net to break free from the attachment fittings.

2.3 *Recommended Test Equipment*

2.3.1 *Handling and securing*

2.3.1.1 A pallet complying with IS : 11499-1985 or a base with equivalent net attachments shall be used.

2.3.1.2 A crane or lifting means with capacity to lift the gross weight of the loaded pallet, lift fixture and net assembly shall be provided. Sufficient height shall exist under the hook to permit positioning of the pallet, lift fixture and net assembly vertically on either side or end.

2.3.1.3 When carrying out the structural test, sufficient payload to meet the test load requirements shall be provided. Where appropriate, load producing devices or water may be used.

2.4 *Test Procedure — Operational Loads*

2.4.1 *Test 1 — Net strength, upload* — Attach the net assembly to a pallet complying with IS : 11499-1985 or an equivalent base. Load the assembly with a uniformly distributed load equal to the gross weight and suspend it upside down as shown in Fig. 2. After lifting, allow the net assembly to remain suspended for not less than 5 min and then lower the assembly to the ground. No permanent deformation or failure shall occur.

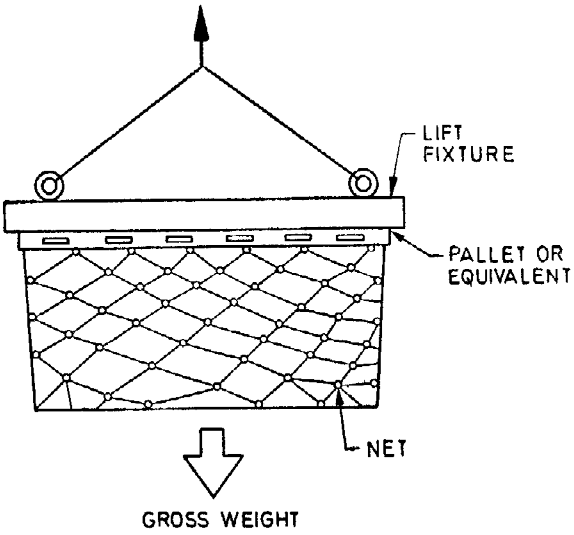

FIG. 2 UPLOAD ARRANGEMENT—TYPICAL

2.4.2 *Test 2 — Net strength, forward load* — Attach the net assembly to a pallet complying with IS : 11499-1985 or an equivalent base. Apply a uniformly distributed load equal to the gross weight for not less than 5 min to one 2 400 mm end of the net. The centre of gravity of the load shall be at a height of 1 200 mm measured vertically from the pallet bottom surface and shall be within the lateral and longitudinal limits specified in **2.4.4** of IS : 11553-1986 'Specification for air-land cargo pallet-nets'. No permanent deformation or failure shall occur.

2.4.3 *Test 3 — Net strength, side load* — Attach the net assembly to a pallet complying with IS : 11499-1985 or an equivalent base. Apply a uniformly distributed load equal to the gross weight for not less than 5 min to one side of the net. The centre of gravity of the load shall be at a height of 1 200 mm measured vertically from the pallet bottom surface and shall be within the lateral and longitudinal limits specified in **2.4.4** of IS : 11553-1986. No permanent deformation or failure shall occur.

2.5 *Test Procedure — Environmental*

2.5.1 Subject any parts that cannot be adequately protected against corrosion to a test duplicating the anticipated environment. Subsequent corrosion shall not preclude the parts from performing their design functions nor shall it cause failure of a pallet net during the design life of the net.

2.5.2 Place the empty net assembly in a suitable test chamber at 70°C ambient temperature for 48 h.

2.5.2.1 At the end of 48 h, evaluate its condition while the structure is at or near the test temperature. There shall be no evidence of net degradation.

2.5.2.2 Then place the empty net assembly in a suitable test chamber at — 55°C ambient temperature for 48 h.

2.5.2.3 At the end of 48 h, evaluate its condition while the structure is at or near the test temperature. There shall be no evidence of net degradation.

2.6 *Production Nets* — To show compliance with its specification standard, commercial inspection and quality control methods and practices shall be used to assure that production units are not inferior to the article tested. Where changes are made to production units and product similarity cannot be clearly established, the first product so changed shall be retested to show compliance with its specification.

3. Marking Requirements

3.1 All nets covered by this standard shall be marked in accordance with the following minimum requirements. The markings shall be shown on the outside of the net in such a manner that good readability is ensured under all phases of handling:

Actual weight, tare.............................. kg

Note — All weights to be rounded off to the next highest 0·5 kg.

3.2 The following additional manufacturer's marking shall be indicated on the net. The positioning of such markings is optional and the letter size shall be approximately 6·35 mm high.

Manufacturer..
(Name) (Country)

Part Number..

EXPLANATORY NOTE

To facilitate international coordination on the subject this Indian Standard is based on ISO 4115-1980 Air-land cargo pallet nets — Specification and testing, issued by International Organization for Standardization (ISO).

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